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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,747	06/30/2000	Min Shao	4797 US	9788

7590 07/29/2003

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EXAMINER
SUBRAMANIAN, NARAYANSWAMY

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/607,747	SHAO ET AL.	
	Examiner	Art Unit	
	Narayanswamy Subramanian	3624	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2000* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-136* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-136* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-51, drawn to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account; receiving data of a currently delinquent debt account, selecting a collection method and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the selected collection method to the predictive model, classified in class 705, subclass 38.

II. Claims 52-64, drawn to a computer implemented method for developing a predictive model for a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical data for transactions occurring over a period of time, receiving for the plurality of accounts, the collection methods used on the accounts and the amount collected on each account and creating the predictive model using the historical transaction data, the collection methods used, and the amount collected on each account, classified in class 705, subclass 38.

III. Claims 65-98, drawn to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, profiles of delinquent debt accounts that summarize patterns of events in the accounts, and the success of the collection effort in each account, receiving data regarding a currently

delinquent debt account, obtaining a profile that summarizes patterns of events in the delinquent debt account and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the profile to the predictive model, classified in class 705, subclass 38.

IV. Claims 99-103, drawn to a computer implemented method for developing a predictive model for a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical transaction data of delinquent debt accounts, events that have occurred in the history of each debt account, and the success of collection efforts, wherein success is the amount collected, for each of the accounts, creating a profile summarizing patterns of the transactions data and the events in the account and creating the predictive model using the historical transaction data, the profiles and the success of the collection efforts, classified in class 705, subclass 38.

V. Claims 104-115, drawn to a computer implemented method for modeling textual information about a delinquent debt account, the method consisting of receiving text notes taken by collectors who have worked on the account, transforming the text into a mathematical representation of conceptual relationships among collection notes and generating a signal modeling the text using the mathematical representation, classified in class 705, subclass 38.

VI. Claims 116-120, drawn to a computer implemented method of estimating the value of a delinquent debt, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account, receiving data of a currently delinquent debt account, calculating the likelihood of collecting on the currently

delinquent debt given a particular collection method using the predictive model, calculating the time until the debt will be collected, estimating the cost of the particular collection method and generating a signal indicative of the value of the delinquent debt using the likelihood of collecting on the currently delinquent debt account, the time until collection, and the cost of the collection method, classified in class 705, subclass 38.

VII. Claims 121-123, drawn to a computer implemented method of estimating the suitability of a collector to collect on a delinquent debt account, the method comprising storing a predictive model of collector suitability generated using historical data of delinquent debt accounts, data about the collector used on each account, and the success of the collection methods in each account, receiving data of a currently delinquent debt account, selecting a collector and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the selected collector to the predictive model, classified in class 705, subclass 38.

VIII. Claim 124, drawn to a computer implemented method for developing a predictive model for determining the suitability of a collector for collecting on a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical data for transactions occurring over a period of time, receiving for the plurality of accounts, data about the collector used to collect on each account and the success of the collection efforts, wherein success is the amount collected and creating the predictive model using the historical transaction data, data about the collector used, and the success of the collection efforts, classified in class 705, subclass 38.

IX. Claims 125-126, drawn to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the set of collection actions used in each account, and the success of the collection actions in each account, receiving data of a currently delinquent debt account, selecting a sequence of collection actions and generating a signal indicative of the likelihood of collecting on the currently delinquent debt using the selected sequence of collection actions by applying the data of the currently delinquent debt and the selected sequence of collection actions to the predictive model, classified in class 705, subclass 38.

X. Claims 127-130, drawn to a computer implemented method for developing a predictive model for a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical data for transactions occurring over a period of time, receiving for the plurality of accounts, the set of collection actions used on each account and the success of the collection actions used on each account, wherein success is measured by the amount collected; and creating the predictive model using the historical transaction data, the set of collection actions used, and the success of the collection actions in each account, classified in class 705, subclass 38.

XI. Claim 131, drawn to a computer implemented method of pricing a portfolio of delinquent debts, the method comprising selecting an optimal set of collection actions for each account in the portfolio of delinquent debts using a predictive model generated using historical data of delinquent debt accounts, the collection methods used in each historical account, and the success of the collection methods in each historical account, estimating the likelihood of

collecting on each account in the portfolio using the predictive model, estimating the cost of the collection actions taken in each account in the portfolio, calculating a value for each account in the portfolio using the likelihood of collection and the cost of collection actions and calculating a portfolio value, wherein the portfolio value is the sum of the values of each account in the portfolio, classified in class 705, subclass 38.

XII. Claims 132-136, drawn to a system for predicting the likelihood of collecting on a delinquent debt on an account, comprising a predictive model for predicting the likelihood of collecting on a delinquent debt account, a set of information regarding delinquent debt accounts, including a mathematical representation of the collectors' notes for each account and a debt collection facility, wherein the debt collection facility applies the information regarding delinquent debt accounts to the predictive model and uses the model results to make decisions regarding the delinquent debt accounts, classified in class 705, subclass 38.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as sub combinations disclosed as usable together in a single combination. The sub combinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I relates to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account; receiving data of a currently delinquent debt account, selecting a collection method and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and

the selected collection method to the predictive mode, whereas invention II relates to a computer implemented method for developing a predictive model for a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical data for transactions occurring over a period of time, receiving for the plurality of accounts, the collection methods used on the accounts and the amount collected on each account and creating the predictive model using the historical transaction data, the collection methods used, and the amount collected on each account. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper even though they are classified in the same class and sub class.

Inventions I and III are related as sub combinations disclosed as usable together in a single combination. The sub combinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I relates to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account; receiving data of a currently delinquent debt account, selecting a collection method and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the selected collection method to the predictive mode, whereas invention III relates to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood

generated using historical data of delinquent debt accounts, profiles of delinquent debt accounts that summarize patterns of events in the accounts, and the success of the collection effort in each account, receiving data regarding a currently delinquent debt account, obtaining a profile that summarizes patterns of events in the delinquent debt account and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the profile to the predictive model. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group III, restriction for examination purposes as indicated is proper even though they are classified in the same class and sub class.

Inventions I and IV are related as sub combinations disclosed as usable together in a single combination. The sub combinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I relates to a computer implemented method of predicting the likelihood of collecting on a delinquent debt on an account, the method comprising storing a predictive model of debt collection likelihood generated using historical data of delinquent debt accounts, the collection methods used in each account, and the success of the collection methods in each account; receiving data of a currently delinquent debt account, selecting a collection method and generating a signal indicative of the likelihood of collecting on the currently delinquent debt by applying the data of the currently delinquent debt account and the selected collection method to the predictive mode, whereas invention IV relates to a computer implemented method for developing a predictive model for a delinquent debt account, comprising the operations of receiving for a plurality of accounts, historical transaction data of delinquent debt accounts, events that have occurred in the history of each debt account, and the

success of collection efforts, wherein success is the amount collected, for each of the accounts, creating a profile summarizing patterns of the transactions data and the events in the account and creating the predictive model using the historical transaction data, the profiles and the success of the collection efforts. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group IV, restriction for examination purposes as indicated is proper even though they are classified in the same class and sub class.

Similarly other pairing of inventions stated above are related as sub combinations disclosed as usable together in a single combination. These inventions are distinct from each other as can be evident from the definition of the groups described above. Also they require separate searches and hence restriction of these inventions for examination purposes as indicated is proper.

3. A telephone call was made to Ms. Julia Thomas on July 10, 2003 with subsequent follow up on July 22, 2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

4. Applicants are advised that reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Narayanswamy Subramanian whose telephone number is (703) 305-4878. The examiner can normally be reached Monday-Thursday from 8:30 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached at (703) 308-1065. The fax number for Formal or Official faxes and Draft or Informal faxes to Technology Center 3600 or this Art Unit is (703) 305-7687. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1113.

N. Subramanian
July 23, 2003

Richard Weisberger
Primary Examiner